In vitro influence of a benzimidazole derivative (RCB15) on the glycolytic pathway of *Taenia crassiceps* cysticerci

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The high prevalence of intestinal and tissue parasites combined with the breakthrough of parasites resistat to albendazole, encouraged the search for new drugs. Studies on the biochemical response of *Taenia crassiceps* metacestode to drugs has been shown to be important for the detection of modes of action of drugs within the parasite metabolic pathways. In order to develop new anti-parasitic drugs, the benzimidazole derivative 6-Chloro-5- (2,3-dichlorophenoxy) -2- (trifluoromethyl) -1H-benzimidazole (RCB15) was synthesized. The aim of this study was to evaluate the *in vitro* effect of RCB15 on the glycolytic pathway of *Taenia crassiceps* cysticerci. 30 larval stage cysticerci were plated in culture plates containing supplemented RPMI and albendazole sulfoxide (ABZSO) (6,5 μM, 13 μM, 26 μM, 52 μM or 104 μM) or RCB15 (6,5 μM, 13 μM, 26 μM, 52 μM or 104 μM) diluted in DMSO. After 24 hours of cultivation, the cysticerci were separated from the culture medium and frozen in liquid nitrogen. Analyses on high-performance liquid chromatography and espectrophotometry to assess the organic acids related to the glycolytic pathway were performed. There was a decrease in glucose concentrations detected in vesicular fluid in all groups treated with RCB15 and the groups treated with the highest dosages of ABZSO. The non detection of lactate in the culture medium of the groups treated with RCB15 indicates that this acid was used as a precursor of gluconeogenesis. The group treated with RCB15 52 uM performed the aerobic energetic pathways due to the non-detection of lactate neither in the vesicular fluid nor in the culture medium. Therefore the RCB15 treatment induced gluconeogenesis in the treated groups as it interfered in the glucose uptake and resulted in higher glucose concentrations in the cysticerci extract.

Key words: energetic metabolism, Taenia crassiceps, benzimidazole derivative